WHAT IS CLAIMED IS:

1. A method for regulating an output voltage of a switching power supply to a target value, comprising:

calculating a reference value;

calculating a duty ratio according to a difference between the reference value and the output voltage so as to reduce the difference;

generating a switching pulse having the calculated duty ratio; and

switching an input voltage of the switching power supply in response to the generated switching pulse,

wherein calculating the reference value includes, when the target value of the output voltage is altered, monotonously and linearly changing the reference value a plurality of times at a plurality of gradients to the altered target value.

2. A method according to claim 1, wherein calculating the reference value includes linearly changing the reference value at a first gradient and then linearly changing thus changed reference value to the altered target value at a second gradient different from the first gradient, the second gradient having an absolute value smaller than that of the first gradient.

3. A method according to claim 1, wherein calculating the reference value includes linearly changing the reference value at a third gradient and

then linearly changing thus changed reference value to the altered target value at a fourth gradient different from the third gradient, the fourth gradient having an absolute value smaller than that of the third gradient.

4. A method according to claim 1, wherein calculating the reference value includes linearly changing the reference value at a gradient with an absolute value gradually decreasing as the reference value approaches the altered target value.

5. A method according to claim 1, wherein calculating the reference value includes linearly changing the reference value at a fifth gradient from the target value before being altered and then linearly changing thus changed reference value to the altered target value at a sixth gradient different from the fifth gradient, the fifth gradient having an absolute value smaller than that of the sixth gradient.

6. An output control circuit for regulating an output voltage of a switching power supply to a target value, the switching power supply switching an input voltage in response to a switching pulse, comprising:

a reference calculator circuit for calculating a reference value;

a circuit for calculating a duty ratio corresponding to a difference between the reference

value and the output voltage so as to reduce the difference; and

a generator circuit for generating the switching pulse having the duty ratio,

wherein, when the target value of the output voltage is altered, the reference calculator circuit monotonously and linearly changes the reference value a plurality of times at a plurality of gradients to the altered target value.

7. An output control circuit according to claim 6, wherein the reference calculator circuit linearly changes the reference value at a first gradient and then linearly changes thus changed reference value to the altered target value at a second gradient different from the first gradient, the second gradient having an absolute value smaller than that of the first gradient.

8. An output control circuit according to claim 6, wherein the reference calculator circuit linearly changes the reference value at a third gradient and then linearly changes thus changed reference value to the altered target value at a fourth gradient different from the third gradient, the fourth gradient having an absolute value smaller than that of the third gradient.

9. An output control circuit according to claim 6, wherein the reference calculator circuit linearly changes the reference value at a gradient with an

absolute value gradually decreasing as the reference value approaches the altered target value.

10. An output control circuit according to claim 6, wherein the reference calculator circuit linearly changes the reference value at a fifth gradient from the target value before being altered and then linearly changes thus changed reference value to the altered target value at a sixth gradient different from the fifth gradient, the fifth gradient having an absolute value smaller than that of the sixth gradient.

11. A switching power supply for generating an output voltage of a target value by switching an input voltage, comprising:

a switching device for switching the input voltage in response to a switching pulse; and

an output control circuit according to claim 6 for generating the switching pulse and supplying the switching device with the generated switching pulse.